Background History of Papillomavirus Workshops.

Prior to 1980, there were occasional gatherings of scientists working on papillomaviruses and associated diseases. Those held, for instance, in Freiberg, Minneapolis and Atlanta served to introduce the relatively small number of basic scientists working on animal and human papillomaviruses to one another and to the clinical researchers studying the etiology of warts of the cutaneous and mucosal epithelium. Once molecular cloning of viral genomes recovered from various types of warts began in 1976 and it became evident that there was more than a single type of human papillomavirus, the workshops also established standards for designating virus types according to DNA sequence homologies. By 1980, there were 6 types of human papilloma viruses cloned, plus some DNA restriction site variants.

In 1980-1981, the time seemed appropriate to organize and widely advertise a conference on papillomaviruses and the epithelial diseases they cause. By then, clinical studies by Leo Koss, Alexander Meisels and others demonstrated that papillomaviruses were associated with genital warts and the cytological changes of the cervix for which Pap (Papanicolaou) smears screen. Harald zur Hausen had postulated that HPVs were etiological agents for cervical cancer. The work of Gerard Orth, Stephania Jablonska and their colleagues demonstrated a direct human papillomaviral role in carcinomas progressing from epidermodysplasia verruciformis in rare individuals with familial cell-mediated immune deficiencies. William Jarrett's studies showed esophageal cancers arose in cows that had natural or experimental infection with bovine papillomaviruses and later ingested bracken fern. Such investigations were founded on the long tradition of classical virology and experimental tumorigenesis begun by Richard Shope, Peyton Rous and his colleagues J.G. Kidd, J.W. Baird, and W.F. Friedewald, J.T. Syverton, and C.A. Evans and Yohei Ito. They all studied the cottontail rabbit (Shope) papillomavirus, the first DNA tumor virus to be discovered and characterized. The career-long studies of bovine papillomaviruses by Carl Olson set up the other major experimental animal model system and led, for instance, to the establishment by Doug Lowy and Peter Howley of BPV-transformed mouse C127 cells, still the best cell culture system available.

Tom Broker, then at Cold Spring Harbor Lab, and Peter Howley of the National Cancer Institute served as co-organizers of the Cold Spring Harbor papillomavirus workshop. Much of the initial discussion, in consultation with established researchers and clinicians in the field, centered on the most desirable format of the meeting and on a number of unusual situations. The several critical issues were (1) the very different perspectives, research techniques, and terminology of cell biologists, virologists, molecular biologists, dermatologists, gynecologists, pathologists, public health workers and epidemiologists; (2) the world-wide, but scattered, distribution of laboratories and hospitals engaged in research on animal and human papillomaviruses; and (3) the desirability of including graduate students, post-doctoral fellows, medical research fellows and other active young investigators in the meeting. This first major conference on the subject was explicitly designed to optimize global participation and meaningful exchange of complex, often unfamiliar, concepts with a spirit of informality and cooperation, with the expectation that the Papillomavirus Workshop would become a regular event (though no one could have predicted then it would become annual immediately).

Some of the ways in which these goals were achieved were:

(1) A comprehensive mailing list for announcements was developed by surveying the literature of the clinical and basic research over the preceding 5 years, and known scientists and clinicians working in the field were asked to inform the organizers of interested colleagues.

(2) Through the auspices of conference grants from NIH and the National Science Foundation as well as smaller contributions from a dozen biotechnology and pharmaceutical companies, the registration, room and board fees of all

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graduate students, some post-doctoral fellows, and almost all overseas participants were completely defrayed. As a result, 119 people attended, two-and-a-half times more than at any previous meeting, and they came from a dozen countries and represented all stages of professional development.

(3) Following a keynote overview on the biology and differentiation of the epithelium by Dr. Howard Green, session chairmen were particularly thorough in introducing topics. Special workshops were held on the terminology of molecular biology, pathological diagnosis, gynecology, and laser surgery so that the participants could move toward a common language.

(4) The proceedings were kept very informal in the open setting of Cold Spring Harbor, and a number of mixers and social events were scheduled to provide casual opportunities for the diverse group of participants to meet and talk, many for the first time, and to establish friendships.

(5) A consensus decision was made to hold subsequent meetings in many different places so that they would be relatively near most investigator's home laboratory every few years and would also provide the stimulation created by attractive conference environments. Whenever possible, advantage was taken of established conference offices and their organizational skills.

The mutual understanding and respect that grew out of the 1982 meeting has carried over and increased with each successive workshop. It is reasonable to state that rarely has any field of basic medical research managed to foster as many productive collaborations and friendships, to ensure such open exchange of unpublished results and reagents such as recombinant DNA clones, cell lines and antibodies, and to make such enormous progress in so few years. The quest to unravel the difficult biology of papillomaviruses and the urgency brought about by the growing appreciation of the range of diseases, particularly carcinomas, associated with PV infections has focussed and intensified research activity but has also tempered the usual competitive urges in constructive ways.

The 1989 International Papillomavirus Workshop in Taos, New Mexico.

The proposed UCLA meeting on papillomaviruses in Taos is scheduled four years after the previous UCLA meeting on Papillomaviruses held in Steamboat Springs, Colorado. As a result of discussions with a broadly representative group of advisors, numerous considerations have gone into site-selection as well as meeting format. A number of real concerns have been identified and addressed:

Timing. It will be only 9 months after the meeting in Sophia-Antipolis, France on the Cote d'Azur. Nonetheless, similar short intervals on several occasions in the past were invariably filled with impressive progress from many labs, and served to exchange very timely information that compressed the normal time for learning about and taking stock of new developments. Perhaps the urgency of abstract deadlines even spurred along some experiments. Moreover, there have been a growing number of additional regional and subspecialty meetings throughout the year that have been very useful, and they did not detract from participation in or excitement about the annual international workshops. Moreover, the 1988 meeting in France was overwhelmed with an unanticipated number of applications, and about 100 people were denied attendance. Others could not attend due to the distance and expense. Therefore the proposed meeting in Taos will serve to accommodate many people who have not been able to attend a recent workshop. It should be noted that about 168 people participated in the French meeting who were not even on the 1987 mailing list. Many of these were Europeans who had not come to either of the two previous meetings in the US, were young investigators who recently joined established groups, were from labs that had only recently turned their attention to the papillomaviruses and associated diseases, or were representatives from the many biotechnology and pharmaceutical companies just beginning to develop diagnostic or therapeutic products.

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Location. A review of previous and future meeting sites (Table 1) reveals a cycle of meetings in the Eastern U.S., Orient, Western U.S. and Europe. This has provided an intermittent forum for people who did not wish to, or could not afford to, travel long distances or who were perhaps more peripherally interested in following the field. Meetings have been held at diverse geographical settings--seashores, lake districts, urban and cultural centers, and winter resorts--during appropriate seasons--again appealing to diverse tastes and professional schedules. Taos was selected from among many UCLA venues for several reasons: Albuquerque, New Mexico is surprisingly inexpensive to reach from cities all over the U.S. and overseas, based on research into airline costs to many potential destinations. It is in the heart of the American Indian Pueblo and Hispanic cultures and offers an unusually wide range of social and recreational opportunities for groups of participants to pursue during free time and before and after the workshop: the Taos and other Pueblo villages in the Rio Grande Valley, the Indian and Western art and cultural museums in Taos and nearby Sante Fe, the high desert terrain of Taos proper, the ski resort 12 miles away by shuttle bus, and the sight-seeing, hiking, and river rafting possibilities within a day of Taos.

Size and Length of the Workshop. Taos can accommodate, feed and provide conference facilities for 350 people, about the size of the meeting in France. There is a growing concern that the workshops are getting too large for meaningful interactions and for ample opportunities to present one's own data and to see and hear every other participant's contributions. To expand the size of the workshop further would likely detract from its high quality. However, we can and will compensate for the dramatic increase in the number of abstracts submitted for presentation (see Table I) by lengthening the workshop from four to six days, increasing the number of platform talks and poster sessions over that interval, and decreasing the number of presentations per session to allow more time for each presenter. This should improve both the breadth and depth of material coverage. The extended calendar will also create more free time for the all-important informal gatherings that distinguished the early workshops in this series. To improve contacts further, communal dinners are scheduled for Tuesday, with cultural entertainment by an Indian dance ensemble, and for Friday, the traditional banquet on the final evening. Breakfasts will be at three central sites and, in addition, there will be a buffet continental breakfast preceding each morning session in the main meeting hall. These meals should provide extended opportunities for groups of people to discuss their common interests.

Meeting format Considerable thought has been generated on the optimal format for the Conference, based on experience with previous papillomavirus and other meetings and on the advice of a widely representative group of researchers and clinicians in the field. These have focussed on the following concerns and objectives: (a) to retain relative informality despite the growing size; (b) to maintain the opportunity for young investigators to present their material; (c) to present very diverse subject matter in a way that will sustain high interest and excitement without sacrificing basic understanding of the material by researchers and clinicians with very different backgrounds; and (d) to provide information on exciting developments in related fields that can be expected to break new ground for papillomavirus research. Accordingly, we have decided on a composite format for the Workshop:

I. Plenary sessions will have four or five invited speakers presenting 35-40 minute talks with a comprehensive overview of the subject. Speakers will have the chance to integrate new findings from their own group and other research teams, which cannot happen in brief talks. Most speakers will be leaders in the papillomavirus field, while others will bring expertise in complementing disciplines (such as other viral systems, immunology, epithelial cell culture, and tumorigenesis). These specially selected guests will emphasize correlations and contrasts with other disciplines and will suggest new techniques and principles that may be applicable to PV research. These enrichment presentations are expected to stimulate future growth into under-represented areas. Furthermore, by exposure to papillomavirus research, some of the outside experts may be inspired to turn part of their own attention to unresolved problems in the PV field.

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II. Discussion sessions will be co-chaired, generally by one American and one overseas researcher or clinician. Each pair, in consultation with the conference organizers, will review all submitted abstracts within the session topic to select the most exciting new work for presentation in 12 minute talks (10-12 per session). Care will be exercised to assure opportunities for as many different labs as possible to be assigned at least one talk.

III. Poster sessions have emerged as the most important and successful format for communication at the annual Workshops. In particular, they allow the careful review of data, exchange of practical details, discussion of new methodologies, and establishment of collaborations among labs. They have become very busy, crowded and popular, and have extended late into the night. It should be emphasized that senior researchers, young investigators and, most recently, representatives of biotechnology companies have found the posters to be particularly good mixers. To increase their value further, posters at the Taos meeting will be left up for nearly 24 hours to allow presenters the opportunity to view the other posters in the same session and to allow more time for everyone to make the rounds. Moreover, the poster sessions will be divided into several rather diverse themes so that all presentations on a major theme (ie, molecular biology, clinical disease, or commercial products) are not simultaneous, and participants will not have to decide among an excessive number of presentations or curtail serious consideration of posters of interest.

Advertising the Workshop. Tom Broker has for over eight years maintained an IBM-XT name/address/phone data base (now with over 890 names of people working in the field) which has served as the mailing list for meeting announcements. It is constantly updated, in particular after each meeting, and again will serve as the core announcement list. We will also take advantage of the conference mailings to solicit updated phone numbers and also numbers for facsimile and telex terminals. This list, as usual, will be available to all participants and other interested parties, either as hard copy or on IBM diskettes. In its expanded format with fax and telex numbers, the directory will improve communication networks among papillomavirus researchers and clinicians, and will reduce the costs and time necessary to exchange information in the future.

The meeting has been announced at the recent Papillomavirus Workshop in France and has been widely advertised through UCLA Conference bulk mailings, posters and announcements in journals.

Participants. Again, very high priority will be given to including graduate students and post-doctoral fellows in the meeting. Most research groups have, over the years, designated their young investigators to present the lab data, both from the platform and in poster sessions, so that they have been full participants in the proceedings and have established a real visibility that has fostered their careers. Funds are being sought to defray the registration and housing expenses of fifty young investigators.

In keeping with national science policy encouraging technology transfer to the commercial sector, a fair percentage of participants will be representatives of biotechnology and pharmaceutical companies. However, to minimize excessive displacement of academic researchers by corporate employees and to assure equitable access for all interested commercial organizations, companies will be asked to limit their number of representatives and, if the meeting becomes over-subscribed, quotas will be set.

The attached program of session topics and speakers reflects both the desired balance among basic virology and cell biology, clinical aspects of the associated diseases, and the emerging capabilities for diagnostic and therapeutic reagents. Virtually all the invited speakers have accepted their invitations. Several additional speakers from complementing fields will soon be invited to fill out the plenary sessions. As indicated, the oral presentations in the "Discussion Sessions" will be selected from the submitted abstracts just prior to the Workshop.

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Table I. Previous and Projected International Papillomavirus Workshops.

Year	Locations	Organizers	# Attend.	# Abstracts
1982	Cold Spring Harbor, NY	Peter Howley, Tom Broker	119	81
1983	Orenas, Sweden	Ulf Peterson et al.	94	65
1984	Kyoto, Japan	Yohei Ito et al.	125	78
1985	Steamboat Springs, CO (UCLA Symposium)	Peter Howley, Tom Broker	180	81
1985	Kuopio, Finland	Kari & Stina Syrjanen	135	81
1986	Cold Spring Harbor, NY	Bettie Steinberg, Janet Brandsma, Lorne Taichman	300	168
1987	Georgetown University, Washington, DC	Wayne Lancaster, Ben Jenson	330	177
1988	Sophia-Antipolis, France	Gerard Orth, Moshe Yaniv et al.	370	237
1989	Taos, NM (UCLA Symposium)	Tom Broker, Peter Howley	350	
1990	Heidelberg, FRG	Harald zur Hausen		
1991	Seattle, WA	Denise Galloway, Jim McDougall		
1992	Edinburgh, Scotland	Heather Cubie		

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* = Session Convener

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a Burroughs-Wellcome-UCLA Symposium
PAPILLOMAVIRUSES
Organizers: Peter Howley and Thomas Broker
March 11-18, 1989; Taos, New Mexico

PETER HOWLEY N I H
THOMAS BROKER Univ Rochester

Sat 3/11
- Registration
- Cocktails
- Buffet Dinner
- Taos Orientation
- Keynote Address
  - GEORGE KLEIN Karolinska Inst

Sun 3/12
- Breakfast
- CARCINOGENESIS AND THE IMMUNE RESPONSE TO VIRAL INFECTION
  - HARALD ZUR HAUSEN* German Cancer Rsch Ctr
  - ERIC STANBRIDGE U C Irvine
  - COFFEE BREAK
  - GERARD ORTH Inst Pasteur
  - THOMAS BRACIALE Washington Univ Sch Med
- SQUAMOUS EPITHELIAL CELL
  - STUART YUSPA* N I H
    - "The Regulation of Differentiation in Normal and Neoplastic Keratinocytes"
  - COFFEE BREAK
  - ELAINE FUCHS Univ Chicago
  - RICHARD SCHLEGEL N I H
- Cocktails
- Discussion: HPV PATHOGENESIS
  - LUTZ GISSMANN* German Cancer Rsch Ctr
  - KEERTI SHAH* Johns Hopkins Sch Public Hlth

Mon 3/13
- Breakfast
- HOST FACTORS IN VIRAL GENE EXPRESSION
  - MOSHE YANIV* Pasteur Inst
  - ARNOLD BERK U.C. Los Angeles
  - COFFEE BREAK
  - LOUISE CHOW Univ Rochester
- Poster Set Up
- Posters: PATHOGENESIS AND EPIDEMIOLOGY; TRANSCRIPTION AND DNA REPLICATION
- Cocktails
- Discussion: ANIMAL PAPILLOMAVIRUSES
  - WAYNE LANCASTER* Georgetown Univ
  - FELIX WETTSTEIN* U C Los Angeles

Tue 3/14
- Breakfast
- THE PAPILLOMAVIRUS TRANSCRIPTIONAL PROGRAM
  - CARL BAKER* N I H
    - "Regulation of Bovine Papillomavirus Type I Late Gene Expression"
  - JOHN SCHILLER N I H
  - COFFEE BREAK

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* = Session Convener

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THE PAPILLOMAVIRUS TRANSCRIPTIONAL PROGRAM
PAUL LAMBERT N I H
Cocktails
Dinner
Discussion: TRANSCRIPTIONAL REGULATION
HERBERT PFISTER* Univ Erlangen- Nurnberg
ULF PETTERSSON* Univ Uppsala

Wed 3/15
Breakfast
TRANSFORMATION: ANIMAL PAPILLOMAVIRUSES
DANIEL DI MAIO* Yale Univ Med Sch
DOUG HANAHAN Cold Spring Harbor Labs
COFFEE BREAK
FRANCOIS CUZIN Univ Nice
Poster Set Up
Posters: ANIMAL PAPILLOMAVIRUSES; TRANSFORMATION AND CELL BIOLOGY
Cocktails
Discussion: MOLECULAR BIOLOGY
DOUGLAS LOWY* N I H
YOSHI ITO* Univ Kyoto

Thu 3/16
Breakfast
VIRUS HOST CELL INTERACTION
MICHAEL BOTCHAN* U C Berkeley
MONIKA LUSKY Univ Heidelberg
COFFEE BREAK

Poster Set Up
Posters: HUMAN DISEASES; DIAGNOSIS AND THERAPEUTICS
Cocktails
Discussion: HUMAN PAPILLOMAVIRUSES: IMMUNOLOGY, DIAGNOSIS AND THERAPY
KARI SYRJANEN* Univ Kuopio
DENISE GALLOWAY* Hutchinson Cancer Ctr

Fri 3/17
Breakfast
TRANSFORMATION: HUMAN PAPILLOMAVIRUSES
LIONEL CRAWFORD* Imperial Cancer Rsch Fndn
JOHN KREIDER Milton Hershey Med Ctr
"Host Factors Regulating Condylomatous Transformation of HPV-11"
COFFEE BREAK
LAIMONIS LAIMINS Univ Chicago
MATTHIAS DURST German Cancer Rsch Ctr
Informal Discussion
Cocktails
Banquet
Entertainment

Sat 3/18
Departure

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Proposed Budget

Keynote Speaker and Opening Reception	$ 3,500.
Travel, Registration & Housing Expenses for Invited Speakers and Discussion Section Chairmen	
12 from Europe or Asia @ $1400.	16,800.
26 from the U.S. @ 900.	23,400.
Travel, Registration and Housing Expenses for the two Co-organizers @ 900.	1,800.
Registration and Housing Expenses @ 400. for fifty graduate students and post-doctoral fellows (American and foreign)	20,000.
TOTAL ANTICIPATED COSTS:	$65,500.

Conference Funding

The Eighth International Papillomavirus Workshop will receive major sponsorship ($20,000) from the Burroughs-Wellcome Corporation, which has made generous contributions to this and the previous five Workshops. In addition, $10,000 is being provided by the Sponsors' and Directors' Central Funds that underwrite a portion of each UCLA Symposium. A "Conference Grant" proposal has been submitted to the National Institutes of Health requesting $20,000 to support attendance by young investigators. The balance of the necessary funding is being sought from foundations and corporations with a long-standing interest in research on the basic biology of papillomaviruses and on the clinical diagnosis and management of the epithelial lesions and carcinomas with which they are casually associated.

All funding is administered by the central office of the UCLA Symposia. The Director of the UCLA Symposia is C. Fred Fox, PhD, Professor of Microbiology in the Molecular Biology Institute, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024. Robin W. Yeaton, PhD directly coordinates the various symposia and is responsible for Program Development. Mr. Robert Harwood serves as Gift Coordinator. The Symposia Office is located in The Molecular Biology Institute, Room 501, 2032 Armacost Ave., UCLA, Los Angeles, CA 90025. Their telephone number is (213) 207-5042; their telefax number is (213) 207-2397.

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PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR

BIOGRAPHICAL SKETCH

Give the following information for key professional personnel listed on page 2, beginning with the Principal Investigator/Program Director. Photocopy this page for each person.

NAME	TITLE	BIRTHDATE (Mo., Day, Yr.)
Thomas R. Broker [redacted]	Associate Professor, Biochem Member, Cancer Center	Oct. 22, 1944

EDUCATION (Begin with baccalaureate or other initial professional education and include postdoctoral training)

INSTITUTION AND LOCATION	DEGREE (circle highest degree)	YEAR CONFERRED	FIELD OF STUDY
Wesleyan University, Middletown, Connecticut	BA	1966	Chemistry, Biology
Stanford School of Medicine, Stanford, CA (Dr. I.R. Lehman, mentor)	PhD	1972	Biochemistry
California Institute of Technology, Pasadena (Dr. Norman Davidson, mentor)	Post-doct.	72 - 75	Chemistry

RESEARCH AND/OR PROFESSIONAL EXPERIENCE: Concluding with present position, list in chronological order previous employment, experience, and honors. Include present membership on any Federal Government Public Advisory Committee. List, in chronological order, the titles and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. DO NOT EXCEED TWO PAGES.

Cold Spring Harbor Laboratory. Senior Staff Investigator, 1975-1979; Senior Scientist, 1979-1984; Lab Chief, Electron Microscopy Section, 1979-1984.

University of Rochester School of Medicine. Associate Professor of Biochemistry & Member of the Cancer Center, 1984-present.

Co-organizer, 1977, '79, '80, '81 Cold Spring Harbor Bacteriophage Meetings.

Co-organizer, 1978 Cold Spring Harbor Symposium on DNA: Replication & Recombination

Co-organizer, 1981 Cold Spring Harbor Workshop on Medically Important Parasites.

Co-organizer, International Papillomavirus Workshops: 1982 Cold Spring Harbor; 1984 Kyoto; 1985 UCLA/Steamboat Springs, CO; 1989 UCLA/Taos, NM; NY Metropolitan Area: 1982, 1983.

Study Sections: NIH: Molecular Biology, 1977; Sexually Transmitted Diseases Program Projects, 1985, 1988; Experimental Virology, 1987; NCI Site Visit, 1987; NSF Graduate Fellowships, 1984.

Associate Editor, Virology, 1983-present.

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